

$$|\theta_{OA} - \theta_B| \leq 1^\circ$$

FIG.1

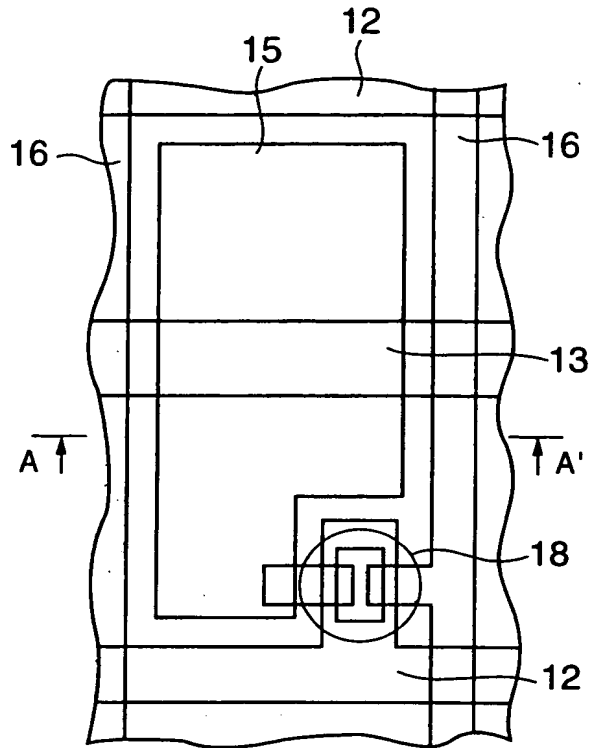
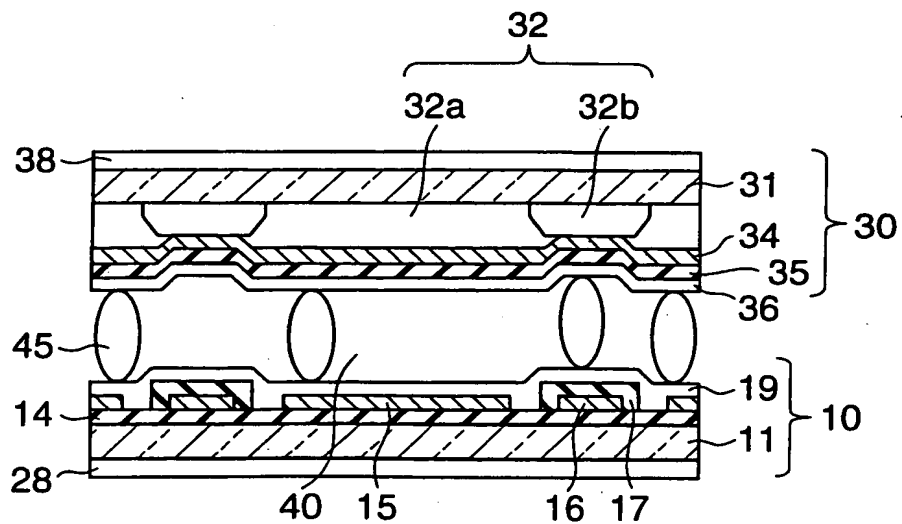


FIG. 2A



CROSS SECTION TAKEN ALONG LINE A-A'

FIG. 2B

ALIGNMENT LAYERS, CONTACT ANGLES, EXTENDING DIRECTIONS AND OPTICAL AXES OF BATONNET
(ANGLES SHIFTED FROM RUBBING DIRECTION)

STRUCTURES OF PRINCIPAL CHAIN	(1)					(2)				
	A	A+B (2:1)	A+B (1:2)	B	C	D	D+E (2:1)	D+E (1:2)	E	F
ALIGNMENT LAYER MATERIAL										
SIDE CHAINS										
PRETILT ANGLES IN NEMATIC LIQUID CRYSTAL [°]	NONE				NONE					
	1-2			3	1-2	3-4			6-9	90
CONTACT ANGLES [°]	(H ₂ O)	30.0	30.4	31.3	31.2	25.4	27.0	28.7	30.2	30.4
	(CH ₂ I ₂)	4.2	5.4	7.5	10.5	5.4	7.6	10.1	11.5	12.4
① SURFACE TENSION	[dyn/cm]	51.2	50.8	49.7	48.8	54.0	52.2	50.1	48.5	48.0
② EXTENDING DIRECTION [°] (OPTICAL AXIS [°] OF BATONNET	a(Ps=210)	5(5)	-(-)	-(-)	7(7)	0(7)	-(-)	-(-)	-(-)	-(-)
	b(160)	5(5)	-(-)	-(-)	5(5)	2(7)	-(-)	-(-)	-(-)	-(-)
	c(30)	-3(-3)	-(-)	-(-)	-4(-4)	-4(-3)	-(-)	-(-)	-(-)	-(-)
	a(Ps=210)	⊙	-	-	○	△	-	-	△	※
③ ALIGNMENT CHARACTERISTICS	b(160)	⊙	-	-	×	×	-	-	×	※
	c(30)	△	△	○	△	○	○	⊙	×	※
④ DETERIORATION RATIOS	c(30)	1.7	1.6	1.8	2.0	4.2	1.8	1.2	1.5	-

FIG.3

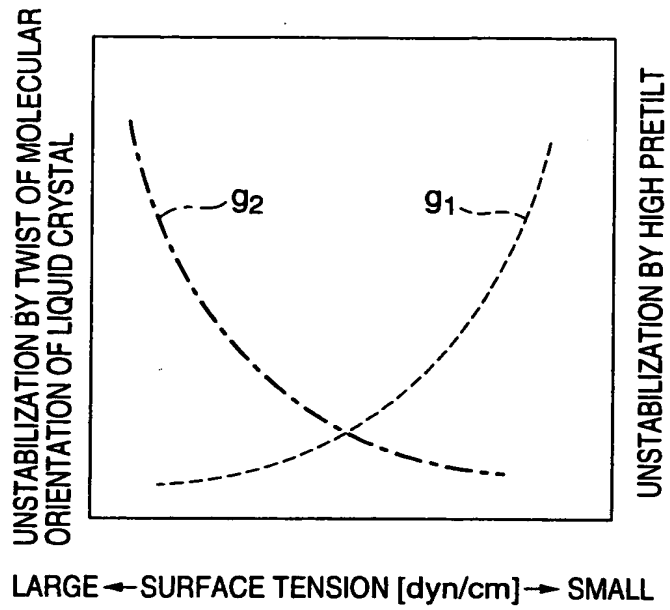


FIG.4

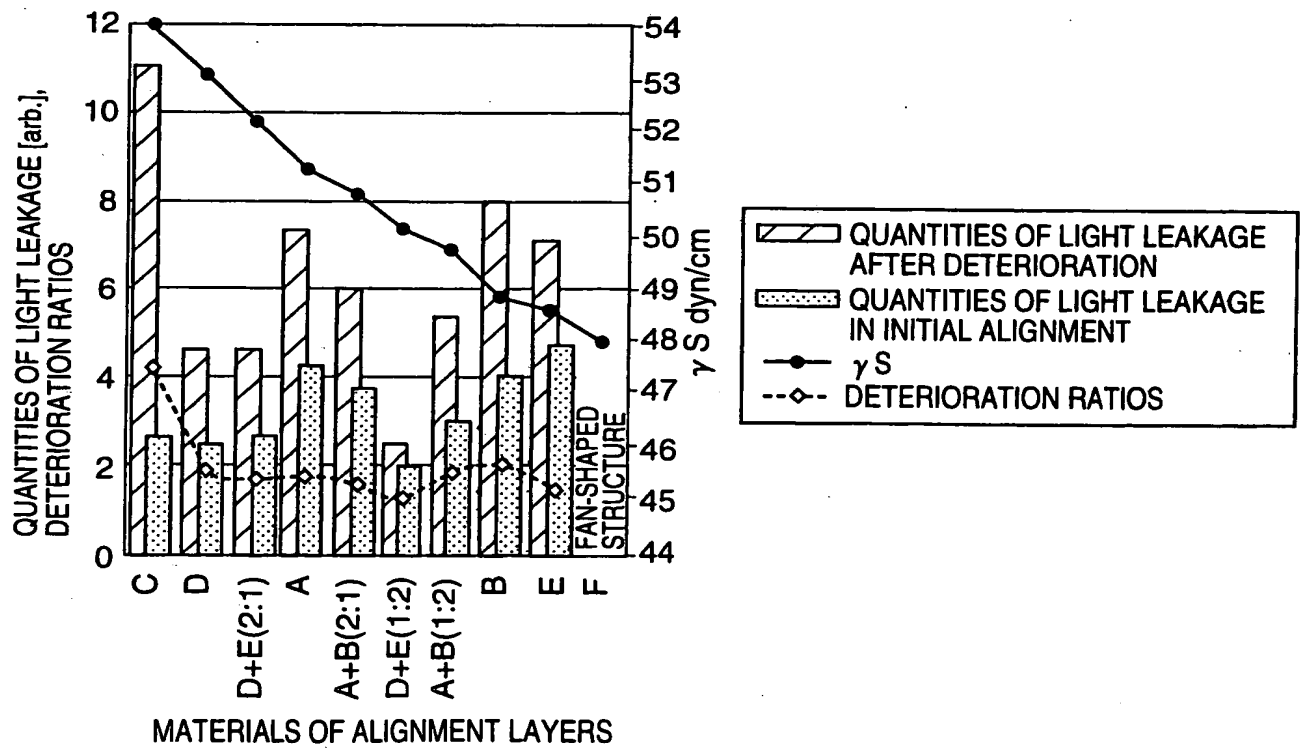


FIG.5

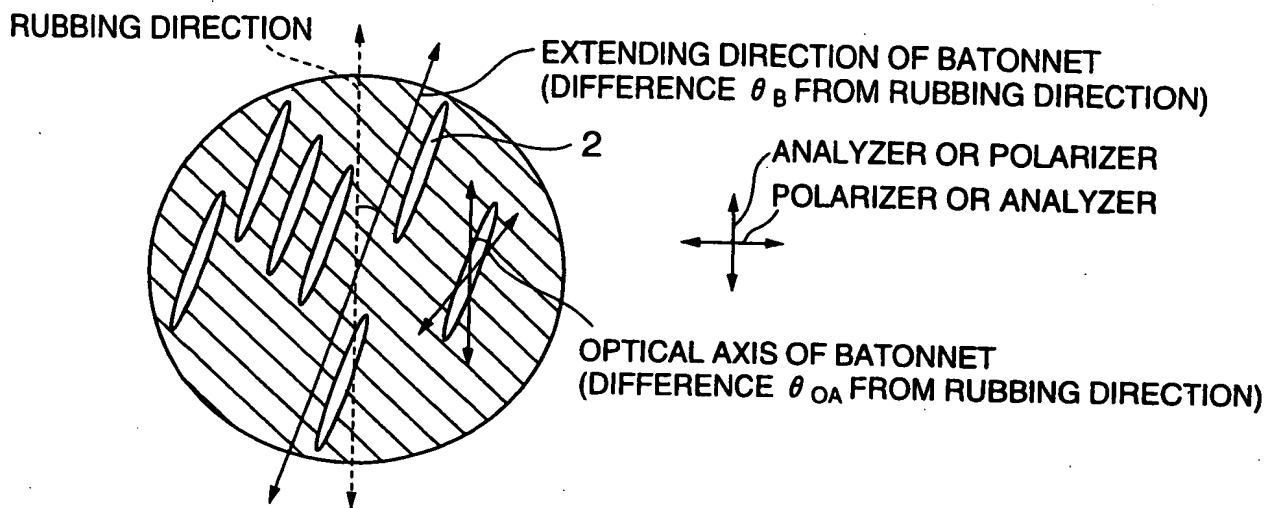


FIG. 6

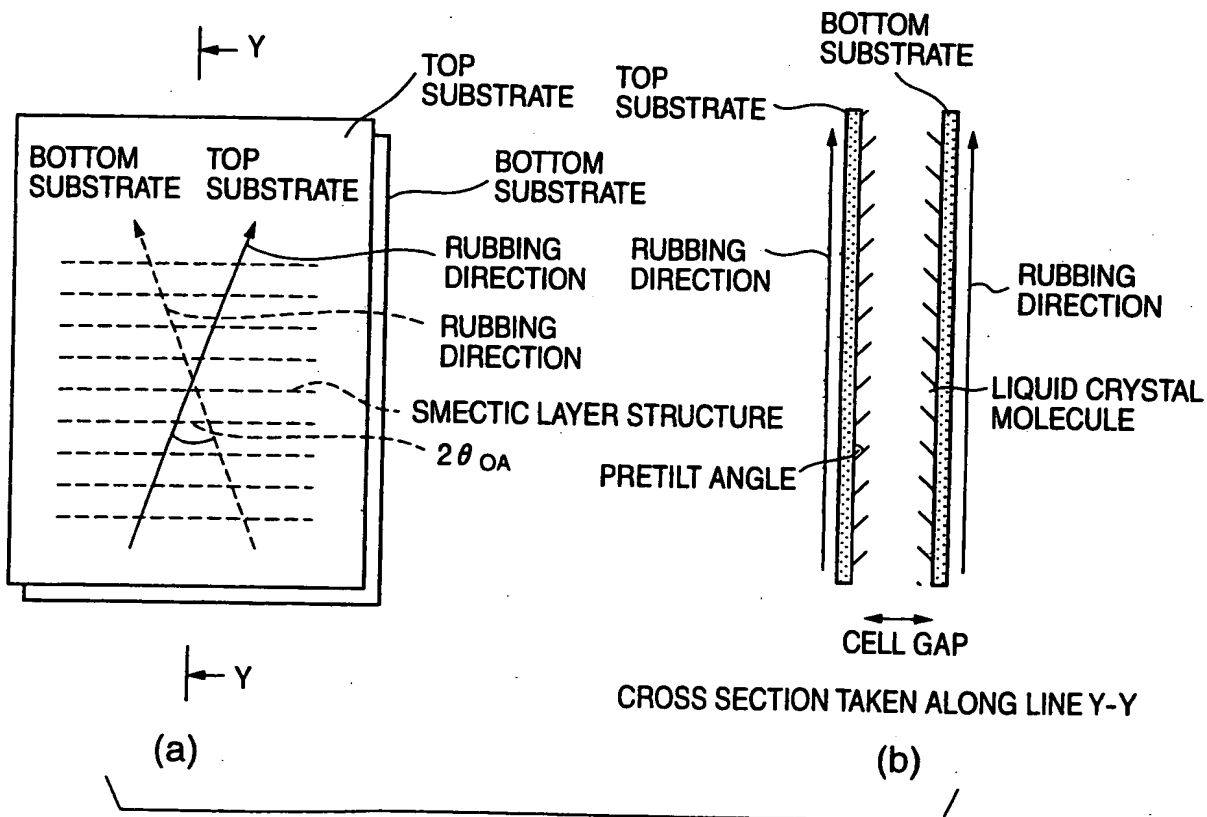


FIG. 7

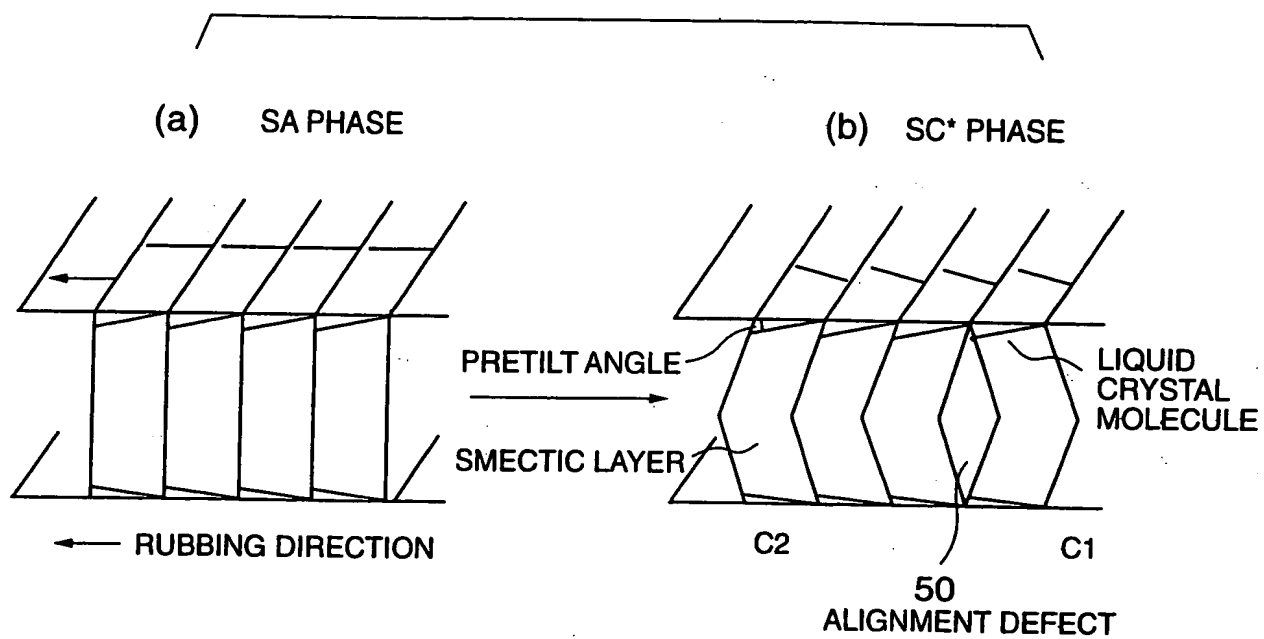


FIG.8

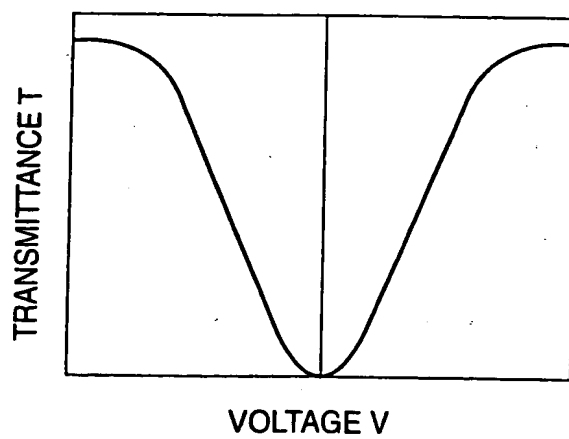


FIG.9

FIG.10A

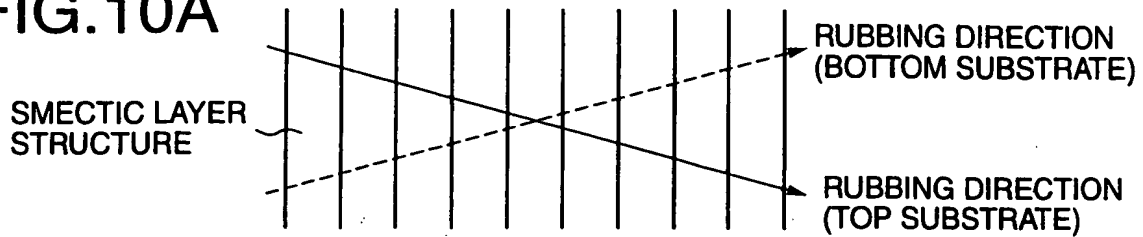


FIG.10B

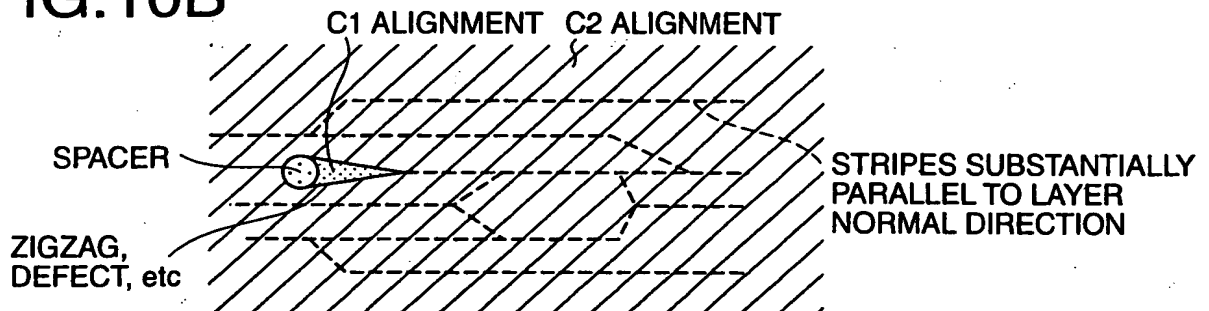


FIG.10C

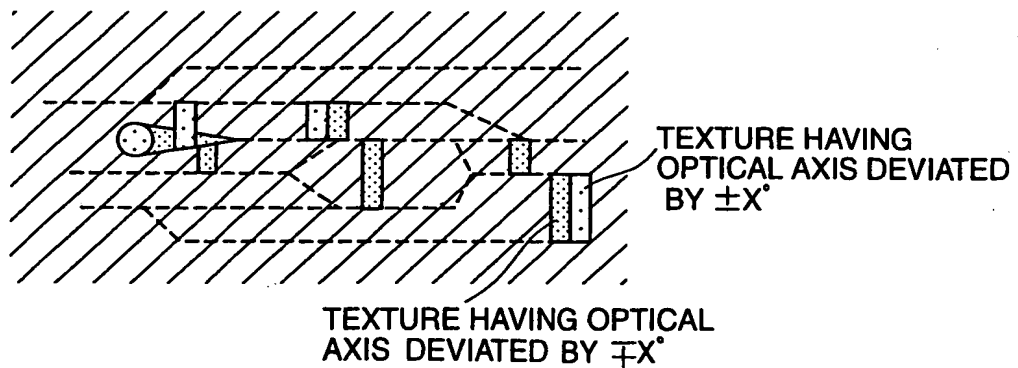


FIG.10D

